REMARKS

With the foregoing amendment claims 1, 3, 5, 6, 8, 10, 12-14 and 16-20 are pending in the application. Claims 1, 5, 8, 13, 17 and 18 are independent. No new matter has been added by the amendments. Applicant respectfully requests reconsideration of the Rejections/Objections, which are discussed below.

Examiner Interview

Applicant wishes to thank the Examiner for the telephone interview with Applicant's representative on August 11, 2005. During the interview, the following prior art references were discussed: Wright and Marley. Additionally, the meaning of the terms "turning number" and "wave number" was also discussed. More specifically, Applicant's representative pointed out that that the "turning number" is a number that represents the total number of turning points in the vowel part and the "wave number" is a number that represents the total number of positive going zero crossings in the vowel part.

Rejection of claims 1, 3, 5-6, 17 and 19

Claims 1, 3, 5-6, 17 and 19 stand rejected under 35 U.S.C. § 103 as being unpatentable over Huang in view of Marley and Wright. Applicant respectfully traverses.

With respect to claim 1, claim 1 is patentable over the art of record because the art of record, considered alone or in combination, does not teach or suggest all of the features of claim 1. For example, none of the art teaches or suggests "determining characteristic parameters of the part of vowel including turning number ... and recognizing a character vowel by comparing the determined characteristic parameters against a rule for vowel recognition, wherein the turning number represents the total number of turning points in the vowel part," as is recited in claim 1. That is, none of the art teaches or suggests (1) determining the total number of turning points in the vowel part and then (2) comparing the number against a rule.

The Examiner appears to assert that Marley teaches a system and method for recognizing a vowel according to characterization rules utilizing slope and waveform

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transitions. In claim 1 of Marley, a method for producing a signal representing a phoneme sound contained in a stream of voice signals is disclosed. The method comprises the steps of: (a) producing a first sequence of analog speech signals representing said voice signals; (b) delta modulating said first sequence of analog speech signals to produce a sequence of digital pulses representing phonemic information contained in said analog speech signals; (c) operating upon said sequence of digital pulses to detect major slope transitions of said analog speech signals; (d) measuring time intervals between predetermined ones of said detected major slope transitions; (e) computing a plurality of speech waveform characteristic ratios between predetermined ones of said time intervals; (f) comparing said speech waveform characteristic ratios with a plurality of stored phoneme ratios to determine if said speech waveform characteristic ratios match any of said stored phoneme characteristic ratios; and (g) producing a signal representing a phoneme sound corresponding to a matching one of said phoneme characteristic ratios.

Specifically, the "major" slope transitions are obtained by detecting presence and absence of **predetermined number of successive slope reversals of a ramp signal (claim 3)**, which is different from the "turning number" of present invention. The turning number of the present invention is defined as the **total number** of slope transitions in one of several repeated vowel waveforms constituting the part of vowel. No where in Marley discloses utilizing the **total number** of slope transitions to assist in recognition of a vowel. Rather, Marley describes measuring **time intervals** between predetermined ones of said detected major slope transitions (in step (d) above). Thus, it is believed that Marley fails to teach a system and method for recognizing a vowel according to characterization rules utilizing slope and waveform transitions in a way claimed by the present invention. For this reason alone, claim 1 is patentable over the art of record.

Moreover, claim 1 also requires "determining characteristic parameters of the part of vowel including ... wave number ... and recognizing a character vowel by comparing the determined characteristic parameters against a rule for vowel recognition, wherein ... the wave number represents the total number of positive going zero crossings in the vowel part." This feature is not taught or suggested by any of the references cited by the Examiner.

The Examiner further asserts that Wright teaches a system capable of classifying consonants, vowels and unvoiced sounds based on certain waveform characteristics, wherein vowels are recognized based on a zero-crossing number compared to a threshold. However, Wright discloses recognizing vowels by measuring the **distances** between zero crossings and extracting significant ones (col. 5, lines 36-70), not by measuring determining the **total number** of times for the waveform of the vowel packet passing through X-axis **from a lower domain to an upper domain,** i.e. the claimed wave number of the present invention, as is required by claim 1. Therefore, Wright fails to teach or suggest all recognizing vowels based on, among other characteristics, a waveform number as claimed in the present invention. For this additional reason, claim 1 is patentable over the art of record.

With respect to claim 3, claim 3 depends from claim 1 and is, therefore, patentable for at least the reasons give above with respect to claim 1.

With respect to claims 5, 6, 17 and 19, the above remarks for claim 1 apply because, like claim 1, claims 5, 6, 17 and 19 all include the feature of "determining characteristic parameters of the part of vowel including turning number, wave number and slope from one of repeated waveforms that constitute the part of vowel, and recognizing the part of vowel by comparing the determined characteristic parameters against the principle for vowel recognition, wherein the turning number represents the total number of turning points in the vowel part and the wave number represents the total number of positive going zero crossings in the vowel part."

Rejection of claims 8, 10, 12-14, 16, 18 and 20

Claims 8, 10, 12-14, 16, 18 and 20 stand rejected under 35 U.S.C. § 103 as being unpatentable over Huang in view of Marley, Wright and Chen. Applicant respectfully traverses.

The above remarks for claim 1 apply equally to claims 8, 10, 12-14, 16, 18 and 20 because, like claim 1, each of claims 8, 10, 12-14, 16, 18 and 20 includes the feature of "determining characteristic parameters of the part of vowel including turning number, wave number and slope from one of repeated waveforms that constitute the part of vowel, and recognizing the part of vowel by comparing the determined characteristic parameters against

the principle for vowel recognition, wherein the turning number represents the total number of turning points in the vowel part and the wave number represents the total number of positive going zero crossings in the vowel part."

CONCLUSION

All of the stated grounds of objection and rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider all presently outstanding objections and rejections, and that they be withdrawn. Applicants believe that a full and complete reply has been made to the outstanding Office Action and, as such, the present application is in condition for allowance.

If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

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